Response to Comments Document
For the
2004 Integrated Water Quality Monitoring and Assessment Methods Document

This Response to Comment document was prepared pursuant to Sections 303(d) of the Federal Clean Water Act

State of New Jersey
Department of Environmental Protection
Land Use Management
Bureau of Water Quality Standards and Assessment

November 20, 2003

Comments received from:
1. Clean Ocean Action and the American Littoral Society. Cindy Zipf, Executive Director, COA. Tom Dillingham, Executive Director, ALS.
2. PSE&G. Russell J. Furnari, Environmental Policy Manager – Water
3. Pinelands Commission. John C. Stokes, Executive Director.
4. USEPA Region II. Heather Barnhart, Community and Ecosystems Protection Branch.

General Comments:

1. Comment: The Department could improve the flow of the Document by moving section 8, which summarizes the entire process that is detailed in the remainder of the Document, to the front (i.e., a new Section 3). In this manner, the discussion of USEPA's Guidance and the Department's decision to use Sublists instead of Categories is presented early. The use of the terms Sublist 1 through 5, later in the Document, will then be clearly understood by the reader. The Department should include in this new Section 3 a detailed list of the Sublist 5 breakdown by waterbody/parameter cited in the introduction on page 3. (2)

Response to Comment: The chapters in the Methods Document are laid out to walk a person through the process from beginning to end: the quality and quantity of data needed; the criteria used to assess the data; and finally, how the assessment is used to place waterbodies on the individual sublists. Although the Department has not moved Section 8, additional language was added to the summary to explain the use of "sublist" rather than "category". Each Sublist 5 will be unique depending on which waterbody segments have data and for which parameters. A list outlining all the possible combinations of waterbody segments and all the water quality criteria applicable to each segment would be huge. Therefore, a list of possible combinations has not been provided. However, an example has been provided in the Introduction.

2. Comment : The draft methods completely fail to evaluate sediments and how they can impair a waterbody. Primary impairments due to sediments are the physical process of sedimentation and the biological impacts associated with chemical contamination. The Department should clearly and comprehensively address sedimentation and resuspension issues in estuarine and coastal areas and seek assistance from outside groups to develop appropriate methods. The draft methods document attempts to address toxic chemicals using comparisons between surface water quality standards and water quality monitoring data. This approach is flawed because it does not account for sediment chemical quality. Aquatic sediments should be assessed for toxins and used to help list waterbodies on the Integrated List. The Department should use the National Sediment Inventory information to classify waterbodies on the Integrated List, including those waterbodies that require additional sampling. Sediment quality data should be used to assist in evaluations for toxic parameters and compliance with narrative standards. (1)

Response to Comment: The Department does evaluate the effects of sediment in biota. However, the Department acknowledges that additional assessment tools are necessary to more completely evaluate the effects of sediment. The Department followed the nationwide trend to develop assessment tools for freshwater first. In freshwater rivers, the physical process of sedimentation as well as the possible presence of toxic substances is reflected in the health of the benthic macroinvertebrate population that is extensively monitored by the Department. Many of the sites listed as impaired due to macroinvertebrate data may reflect poor habitat due to sedimentation or the presence of toxic substances within the sediment. In addition, the Recreation Designated Use Assessment for lakes takes into account sedimentation as well as nutrients. The Department agrees with the comment that sediment needs to be addressed in marine and estuarine waters and is working on developing similar bioassessment tools for estuarine and marine waters. Since neither USEPA nor the Department have adopted numerical standards for toxic substances in the sediment in either fresh or saline waters, the Department relies on the narrative

criteria to assess impairments to designated uses. To evaluate attainment of the narrative standards, the Department would prefer to utilize data on the actual condition of the biota. The Department is working with USEPA to develop estuarine and marine benthic biological indicators. The Methods Document will be revised to include these indicators when developed. In the meantime, sediment toxicity continues to be studied extensively within the NY-NJ harbor estuary system. The NJ-NY Harbor and the Delaware Estuary are listed based on fish consumption advisories for contaminants that are likely in the sediments. The Department is aware of the 1997 USEPA National Sediment Inventory (EPA 823-R-97-006) and the more recent 2001 version; however, these data only suggest where threats to biological or human health are "probable" or "possible" impaired. Although these are important screening data, the Department will list an impairment pursuant to 303(d) when the impairment can be confirmed with data as in the case of the current NY-NJ Harbor and lower Delaware listings.
The Department is reviewing a preliminary draft National Coastal Assessment report by EPA that assesses conditions within the Nation's coastal waters. New Jersey is assessed within the context of the Virginia province. The report, among other things, assesses sediment toxicity and the condition of the benthic biota. The results are currently very preliminary; however, the information may be used to screen for locations where effects from contaminated sediment might be of concern. Methods employed in the report may also point to possible approaches to assess for impacts and methods that could lead to listings on future 303(d) lists. The report is still under review and comment by states across the nation. Therefore, listing based on the draft NCA report is premature.

3. Comment: All available sediment data meeting basic quality assurance and control standards should be adopted by the Department. The Department should also pursue sediment quality data collection, for example, by requiring that all dredging applications require sediment chemical analyses. Data from dredging projects may indicate areas of pollution input not detected by water quality analyses.(1)

Response to Comment: It is assumed that by adopt, the commenter means "use". The Department has established data quality objectives in the Methods Document to ensure that the data collected by outside groups is equivalent to the data collected by the Department. The Department requires applicants for dredging projects to provide information based upon the disposal alternative proposed. All sediment to be dredged is subject to a variety of physical and chemical tests. In general, unless the sediment consists of at least 75% sand or coarser grained material, it is subject to bulk sediment chemistry analysis. Dredged material that is slated for "aquatic disposal" is required to undergo toxicity and bioaccumulation testing. Since neither New Jersey nor USEPA has promulgated sediment criteria, the Department evaluates the effects of any sediment toxicity using the benthic community. Should marine sediment criteria be adopted, the Department will assess sediment data directly.

4. Comment: Quality assured data are necessary for accurate analysis and characterization. The Department correctly emphasizes the importance of science as a "basis for sound, technical assessment decisions" as well as the need to evaluate waterbodies on a case-by-case basis if needed. Case-by-case evaluations should be explicitly allowed when data do not meet minimum data requirements outlined by the Department and USEPA but multiple pieces of evidence demonstrate a weight of evidence for water quality impairment. (1)

Response to Comment: Minimum data requirements were identified to ensure that the data were representative of the waterbody (i.e. not measuring transient conditions). The modified water quality assessment method allows the Department to use data sets that do not meet the minimum requirements on a case-by-case basis. The modified assessment would allow the Department to use multiple pieces of data together to demonstrate a weight of evidence.

Cover page

5. Comment: Cover page. The commenter notes that the Document stands alone and is not being prepared as part of a report submittal and suggests the statement "This report was prepared…." be revised to read "This document was prepared pursuant to USEPA's November 2001, Listing Guidance to be used in the Preparation of the 2004 Integrated Water Quality Listing Report". (2)

Response to Comment: The Department agrees with the comment and has changed the word "report" to "document".

Section 2

6. Comment: Page 3, Paragraph 1, Line 1 and other locations, The reference to the USEPA Guidance is cited incorrectly, the date of the Guidance should be 2001. The Department should review the document and correct this citation wherever it occurs. (2)

Response to Comment: The Department agrees with the comment and has made the suggested edits.

7. Comment: Introduction (p. 3). The commenter supports the delineation of water quality assessment units providing geographic display of assessment results. This is a critical feature of the 2004 *Integrated List of Waterbodies* that will allow this information to be easily accessible and clearly understandable to a wide range of users. We also support the Department's commitment to the importance of science-based decision making in both monitoring and assessment for developing an effective water quality management program. (3)

Response to Comment: The Department acknowledges the commenter's support.

8. Comment: Page 3, Paragraph 5, The Department should reference the detailed list of the waterbody/parameter breakdowns in the discussion of the Sublist 5 provided in Section 8 (new Section 3). (2)

Response to Comment: The Department has not provided a detailed list of the waterbody/parameter breakdowns as explained in Response to Comment 1. Therefore, no reference to a list can be made.

9. Comment: Page 3, Multiple Listings of Waterbody Segments. While the 2004 Integrated Report Guidance states that waters "should" be placed into only one category, the 2004 Integrated Report Guidance continues and asserts that "it is important to note that a water-pollutant combination cannot be moved from Category 5 to Category 4A until TMDLs for all pollutants are completed for a given water." (Page 4) In the draft methodology, the Department states that "the Department has chosen to develop the Integrated List by waterbody/parameter, not just by waterbody."(Page3) While the Department may elect not to place waters into one Integrated Report category as suggested in the 2004 Integrated Report Guidance, the Department's final Methodology should explain clearly why the Department's deviation from the guidance is better suited for preparing the Department's Integrated Report. (4)

Response to Comment: As explained on page 3 of the Methods Document, the Department stated that identifying a waterbody solely by the worst parameter, gave an overly negative view of conditions. It does not recognize accomplishments as individual parameters previously in non compliance are brought into compliance. Under the USEPA guidance, a waterbody could be placed on Sublist 5 for 10 parameters. After bringing 9 of the 10 parameters into compliance, the waterbody would still be identified only as impaired. Stakeholders expressed a strong desire to visually track accomplishments. Using the waterbody/parameter specific method of listing, stakeholders can easily see when an improvement is realized in any one parameter or designated use. Using this approach, a waterbody will be listed on Sublist 5 until all pollutants are addressed.

10. Comment: Page 5, Paragraph 3. The Department should include the regulatory definition of "surface water quality standards" as defined in NJAC 7:9B-1.4 which is, in pertinent part, as follows: SWQS means "designated uses, use classifications and water quality criteria for the State's waters based upon such uses and the Department's policies concerning these uses, classifications and criteria." Although it is mentioned briefly, the Department should emphasize that the SWQS discussed throughout the Document are those that are legally binding. (2)

Response to Comment: The Department has added the phrase "designated uses, use classifications and water quality criteria for the State's waters based upon such uses and the Department's policies concerning these uses, classifications and criteria" for clarification as suggested. The paragraph referred to does state that the "The terms "applicable SWQS" and "applicable criteria" refer to the legally binding SWQS and criteria for the waterbody…".

Section 3

11. Comment: General Data requirements are not protective. The Department should explore the use of alternative types of data to assess water quality. Such alternative data might include evidence regarding the probability of impacts to waterbodies based on GIS analysis and adjacent land uses, among others. (1)

Response to Comment: Alternative data as outlined in the comment are appropriate for general description of the water quality under the old version of the 305(b) report and may be appropriate as screening tools under the Integrated List. Such methods could be effective screening tools to plan monitoring priorities but in regards to listing on 303(d), the Department's policy is to list waterbodies where impairments are known based on actual data.

12. Comment: Quality assured data are necessary for accurate analysis and characterization. The Department correctly emphasizes the importance of science as a "basis for sound, technical assessment decisions" as well as the need to evaluate waterbodies on a case-by-case basis if needed. Case-by-case evaluations should be explicitly allowed when data do not meet minimum data requirements outlined by the Department and USEPA but multiple pieces of evidence demonstrate a weight of evidence for water quality impairment. (1)

13. Comment: Page 7, Paragraph entitled "Data Sources", The Department should introduce and define the various data sources such as AMNET and ASMN in this section and explain to the reader how each source used. (2)

Response to Comments 11 and 12: The Methods Document outlines the general assessment methods utilized by the Department in developing an Integrated List. The Methods Document is finalized prior to the development of the Integrated List. Therefore, the specific sources of data utilized for the development of the Integrated List will be addressed in the Integrated Report for that reporting cycle. The data sources used for the development of the 2004 Integrated List will be identified and described in Appendix II of the 2004 Integrated Report as it was in the 2002 Integrated Report.

14. Comment: Page 7, Paragraph entitled "Data Sources". Does the Department consider published, but not formally submitted, data, such as USEPA's Coastal Monitoring data, to be readily available? (4)

Response to Comment: The purpose of the data solicitation is to give anyone within or outside of the Department an opportunity to bring data sources to the attention of staff responsible for the development of the Integrated List. A data package must include an approved Quality Assurance Project Plan, a citeable report and the data in electronic format. The Department would consider data stored in a database on a website with public access as data in electronic format. If the data is available to the Department via a website, it is not necessary to resubmit the raw data to the Department. However, it is important that the

Department is notified that the data is available. In the case of USEPA's Coastal Monitoring data, since USEPA has submitted a Quality Assurance Project Plan to the Department, when a final report is submitted and the data is available on a public website, this data will be considered readily available.

15. Comment: The Department proposes to not consider data within mixing zones and zones of initial dilution (ZIDs). This approach is insufficient for a number of reasons. Mixing zones and ZIDs in coastal waters do not protect the marine ecosystem. By definition, they allow impairment. Mixing zones and ZIDs in coastal waters are hypothetical and without field verification. Studies are on-going to determine the actual swathe of mixing zones. Initial findings for coastal New Jersey waters have demonstrated overlapping mixing zones. Wastewater facilities are limited for toxins based on hypothetical calculations so that SWQS are not exceeded a certain distance from the outfall. However, it is unknown whether these hypothetical calculations are accurate. The Department should consider all water quality data, including those within mixing zones and ZIDs.(1)

Response to Comment: New Jersey's SWQS at N.J.A.C. 7:9B-1.5(h) clearly allow for mixing zones and Section 1.5(h)(1)(ii) in particular states "water quality criteria may be exceeded within the regulatory mixing zone". Therefore, the Department believes it is appropriate to monitor outside of regulatory mixing zones. Data collected within a "regulatory mixing zone" that exceeded the water quality criteria are expected and would not be considered representative of the ambient environment.

16. Comment: Page 7, Paragraph entitled "Data Sources". The draft Methodology document does not outline all requisite criteria for considering data as acceptable for use in water quality assessments. The draft methodology only addresses the required format for submission. The final Methodology should include all the criteria the Department uses to determine if data that are submitted to the Department from outside sources are acceptable for use in assessments. (3)

Response to Comment: The Methods Document requires all data be collected in accordance with the Department's published Field Sampling Manual (1992) that includes approved procedures for sample collection, field quality assurance, sample holding times, and other data considerations. Accurate locational data is required to ensure appropriate comparisons to SWQS criteria, as well as confirming that sampling stations are located outside of regulatory mixing zones. Samples must be analyzed at a laboratory certified by the Department's Office of Quality Assurance, or a federal laboratory (e.g., the USGS National Water Quality Laboratory in Denver). The laboratory must use analytical methods certified by the Department, (N.J.A.C. 7:18), the USEPA, or the USGS. Requirements regarding data age, sample size and sample frequency are outlined throughout the Methods Document. The Department has added the following for further clarification: "In determining which data are appropriate and readily available, the Department will consider quality assurance/ quality control, monitoring design, age of data, accurate sampling location information, data documentation and use of electronic data management."

17. Comment: Page 7, Paragraph entitled "Quality Assurance". The Data Solicitation notice to the public requires a "completed QA/QC"; however, the methodology requires an "approved QAPP". What does the Department require in order to utilize outside data? It is unclear which committee(s)/agency(s) review the QAPP's. In addition, the process and time-line for submitting QAPP's is not clearly articulated to the public. (3,4)

Response to Comment: When the Department requested data through a public notice dated May 21, 2001for the 2002 Integrated List, the Department recognized that some water quality data collected at that time may not have been collected under a QA/QC project plan "approved" by the Department. The Department provided notice that it would consider data, which did not have a previously approved QA/QC project plan if the data was collected in accordance with a QA/QC program acceptable to the

Department for the 2002 Integrated List only. The Department maintains a policy that an approved Quality Assurance Project Plan (QAPP) accompany all environmental data collection activities performed by, or for use by, the Department as outlined in the Department and USEPA Region II's approved FY02-FY03 Departmental Quality Management Plan. The Department accepted data from monitoring programs that met QAPP objectives but did not currently have an established and approved QAPP for the 2002 List. Consistent with Department policy, the public notice stated that any future monitoring must be carried out under an approved QA/QC workplan in order to be considered for future Integrated Lists. Consistent with Department policy, the Methods Document requires an "approved QAPP". The Data solicitation (See 35 NJR 891) for the 2004 List was very clear that any data submitted for developing the 2004 Integrated List had to be carried out under an approved Quality Assurance Project Plan (QAPP) (Also referred to as a QA/QC Plan). The QAPP should be submitted to that section of the Department that will review/use the data for approval prior to the commencement of sampling. This is reflected in the Methods Document on page 7. Future Data Solicitations will clearly state that the term "complete QAPP" includes Departmental approval. The Department has added language to the section on Quality Assurance stating that the QAPP should be approved prior to the start of any sample collection. The Data Solicitation clearly states that the QAPP must be submitted with the data package.

Response to Comment: The Department will used the word "approved" in future data solicitations. Any QAPPs for the collection of monitoring data to be used in the development of the Integrated List should be submitted to the Water Monitoring and Standards Element 45 days prior to the commencement of sample collection.

18. Comment: Site Remediation Data. The third paragraph on page 7 references the data quality of the Site Remediation Program. Will these data be used in the 2004 303d list? Will the data of the hazardous waste programs, in general, be used for the 2004 303d list? If not, then there should be some discussion of the reasons to not use these data. (4)

Response to Comment: Site Remediation data will not be used in the 2004 Integrated List. Contaminated site data are difficult to access and evaluate. The Department is exploring ways of screening either contaminated sites or polluted waterbodies (such as use of Source Water Assessment Studies) or both in order to isolate contaminated sites with the greatest potential of contaminating waterbodies.

19. Comment: Estimated Waters. While the 2004 Integrated Report Guidance asks States for specific assessment schedules over only the next two-year period (page 18), States will need to account for Category 3 waters at some time. The Department should explain the role of estimated water and what plans, if any, the Department has to monitor these waters in the future. The methodology should clearly outline how the Department will assign waters to specific Sublist categories in the Integrated Report. (4)

Response to Comment: Many waterbodies listed on Sublist 3 are scheduled to be monitored as part of ongoing special studies such as diurnal dissolved oxygen monitoring or heavy metal monitoring. These efforts are specifically designed to confirm water quality status and move waters off of Sublist 3 to Sublists 1, 4, or 5, as determined by the new data. A subset of proposed Sublist 3 waters will also be monitored as part of the Department's probabilistic monitorng network. However, a significant portion of Sublist 3 waters are benthic macroinvertebrate sites located within Pinelands waters of the State. The Department has reassessed a portion of these sites using additional biological data provided by the Pinelands Commission which resulted in removing these sites from Sublist 3 to either Sublists 1 or 5. Concurrently, the Department is developing a new bioassessment protocol that would be applicable to the Pinelands region overall. With the new assessment protocol, the Department will have sufficient information to assess the remaining Pinelands monitoring sites previously listed as having insufficient information for Aquatic Life use impairment on Sublist 3 to Sublists 1 or 5, as appropriate. Remaining

waterbodies not scheduled for special studies and/or reassessment with biological indicators will be prioritized and scheduled for future monitoring in accordance with resource availability. The Department does not place estimated waters on Sublist 3 at this time. However, it is the Department's intention that many of these estimated waterbodies will be monitored over time. The status of many estimated waters will be assessed on a case by case basis during the TMDL process in order to ascertain the full spacial extent of impairment within the region undergoing a TMDL. Many estimated waters will be monitoried and assessed in 2006 with results to be posted in future Integrated Lists. The Department believes that the Methodology (Section 8 in general and Table 8.1 specifically) does clearly outline how waterbodies are assigned to specific sublists.

20. Comment: Page 8, Paragraph entitled "Pollutant versus Pollution", This section does not appear to address data sources and therefore should be removed. This information more appropriately belongs in Section 8 and is in fact repeated there in a similar format. The discussion citing the Idaho list can be incorporated in Section 8, if the Department believes it is important. (2)

Response to Comment: The Department agrees that the discussion of pollutant versus pollution was redundant and has removed the paragraph on pollution versus pollution from page 8.

21. Comment: Page 8, Paragraph entitled "Electronic Data Management", It would be helpful to the reader if the Department provided additional information on the type of data that is placed into STORET and if this includes sources of biological data used in assessments discussed later in the Document. (2)

Response to Comment: The Department's physical, chemical, and biological data is available in STORET. A link to USEPA's website (http://www.epa.gov/STORET) has been added for additional information on STORET in general.

22. Comment: Page 9, Paragraph entitled "Assessment of Waterbodies on Sublist 5 of the Previous Integrated List". This paragraph and those that follow after it should be relocated to Section 8, as they deal with assessment methodologies and not data management or sources. Section 7 should be added to the list of referenced sections. (2)

Response to Comment: The Department agrees with the comment regarding the "Assessment of Waterbodies on Sublist 5 of the Previous Integrated List" and has added a reference to Section 7 and placed this paragraph in Section 8. The Department believes that the remaining paragraphs belong with data management and has not moved them.

23. Comment: Page 9, Probabilistic Sampling. The redesigned ASMN incorporates probabilistic elements and aims to extrapolate biological and chemical water quality information to AMNET sites with similar land-use characteristics. The methodology needs to supply more detail and to provide clear justification concerning the extrapolation of chemical and biological data from ASMN monitoring sites for assessments of AMNET sites. In addition, all reference information related to the development of AMNET and ASMN monitoring stations needs to be cited in both the methodology discussion and reference sections. (4).

Response to Comment: The reference to AMNET sites describes how probabilistic sites for the ASMN are selected from the 800 site AMNET for location of the probabilistic sites only. It does not imply chemical data would be extrapolated to make biological assessments. Two references were added to the methods document that explains the development of the ASMN and AMNET: "The New Jersey Department of Environmental Protection's Modernized Ambient Chemical Monitoring Network", Jan 98; and "Ambient Biomonitoring Network: Lower Delaware River Drainage Basin", July 1996.

24. Comment: Page 9, Paragraph entitled "Development of an Assessment Method for Probabilistic Sampling Results." The Department has included a list of acronyms, which should be defined the first time they are used. Also the discussion regarding sampling here and at the top of the next page is not clear. In one place it is noted that the statewide status stations are selected at random ever year, later it is noted that they are sampled quarterly for a period of 2 years. The Department should clarify the information provided so that it is consistent. In addition the commenter did not see any reference to a discussion in Appendix II, of the Department's redesigned ASMN unless it is discussed in the appendices (1-5) to Appendix II that were not provided. However, the commenter agrees with the Department that a discussion of the redesigned ASMN is important to the Document and suggests that the appropriate reference be provided.

Response to Comment: The Department agrees that acronyms should be defined the first time they are used and has made the corrections. The text was revised to state that statewide status sites were sampled quarterly for one year from 1998 to 2000, and changed to quarterly for two years beginning in 2001. The redesigned ASMN description has been inserted into the Appendix IV.

25. Comment: Page 10, "Development of an Assessment Method for Probabilistic Sampling Results". The Department needs to define what "statewide status stations" are and then more thoroughly develop the logic for what happens when the assessment results are not the same. (2)

Response to Comment: The description of statewide status stations can be found in Appendix IV. This section describes how statewide status stations with only one year of data were evaluated. The following statement was inserted to help clarify the intent: "The statewide status stations were evaluated using the following approaches to determine designated use attainment for specific stream reaches where the stations are located."

26. Comment: Page 10, Last Paragraph, Consistent with page 5 and the discussion on SWQS, the Department should insert "applicable" before SWQS. (2)

Response to Comment: The Department has made the recommended change.

27. Comment: Page 11, Paragraph entitled "Surface Water Quality Considerations, in the bullet entitled "Magnitude of Exceedence". The words "providing a more conservative assessment" should be removed since the statement relies on regulatory provisions and it does not need to be qualified. (2)

Response to Comment: The Department has removed the phrase "providing a more conservative assessment" as suggested.

Section 4
28. Comment: Page 11, Paragraph entitled "Surface Water Quality Considerations, in the bullet entitled "Duration of Exceedence". The Department should develop an alternative that would define what additional sampling (and statistical analyses) would be needed to more accurately determine if a water quality criteria is being exceeded. The Department's assumption that results of grab sampling are suitable for determining compliance with SWQS that are expressed using time scales of day, week, month, etc, is overly conservative and could lead to waterbodies being unnecessarily placed on Sublist 5. (2)

Response to Comment: The Methods Document is consistent with USEPA guidance that grab samples may be used for comparison to chronic criteria (criteria with a duration of days). ("Guidelines for the Preparation of Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates" (USEPA-841-B-97-002B, September, 1997). The Department does collect depth and cross

section sampling as well as diurnal DO and temperature sampling at some sites for a more inclusive assessment of the water quality.

29. Comment: The draft Methodology omits the antidegradation policies for C1 waters. Please explain why this information was removed from the 2003 draft methodology document or add the antidegradation section back into the document. (4)

Response to Comment: The Anti-degradation policy as it appeared in the 2002 Methods Document was incomplete. The Department has added the complete policy.

30. Comment: Page 11, Design Flows. The design flows listed on page 11 of the draft methodology are not consistent with the 2002 revisions to the NJSWQS. Please update the methodology to reflect the current design flows in the NJSWQS, which were approved by USEPA on August 16, 2002. (4)

Response to Comment: The Department has made the recommended change.

31. Comment: Numeric Water Quality Criteria Assessment (p. 11) Frequency of Exceedance: We support the Department's establishment of a minimum of two criteria exceedances to confirm impaired waters. This practice will provide a safeguard against erroneous assessments based on spikes in water quality parameter levels that may be caused by atypical stream flows, extreme weather and other anomalous conditions. (3)

Response to Comment: The Department acknowledges the support as expressed by this comment.

32. Comment: The terms used in the Methods Document should be clearly defined. For example, the "Frequency of Exceedance" paragraph on page 11 is confusing, uses unclear meanings for terms such as "criteria," and does not distinguish between "conventional" pollutants and "toxins" to which the document later refers in Tables 4.1, 4.2, 4.5, and 4.6.(1)

Response to comment: The Department has modified the paragraph under "Frequency of Exceedence" by replacing the word "criteria" with "SWQS" for clarification. The paragraph does distinguish between conventional and toxic parameters. The 10% rule is used with conventional parameters and the one exceedence in 3 years rule is used with toxic parameters.

33. Comment: Numeric Water Quality Criteria Assessment (p. 11) Natural Conditions: We support the development of site-specific criteria for waterbodies that do not meet applicable Surface Water Quality Standards due to natural conditions. (3)

Response to Comment: The Department acknowledges the support as expressed by this comment.

34. Comment: Page 11, Natural Conditions. In the section "Natural Conditions" on page 11, the methodology should include an explanation of how the state will determine when an excursion can be attributed to natural conditions. In addition, on page 51, item 7 of Section 8.3 should state that waters could be delisted here because New Jersey's surface water quality standards allow that if the condition is "natural," then a new criterion based on natural background governs. Again, it will be important to understand how the "natural condition" was determined. (4)

Response to Comment: Although the SWQS allow natural conditions to prevail, the Department has not developed an assessment method for determining when an excursion can be attributed to natural conditions. The Department is presently working with the Pinelands Commission to develop a protocol for determining natural background in the Pineland-like areas (designated as FW2-NT) not located within

the areas designated officially as Pinelands (PL1). (The area designated as "Pinelands" is delineated by a political boundary not water quality. As a result, streams that are located just outside of the political boundary may have natural water quality similar to that within the political boundary.) When this protocol is developed, it will be included in the Methods Document. There are other areas where natural background may be causing an exceedence of water quality standards such as arsenic, fecal coliform and pH. The Department realizes that additional protocols need to be developed for other areas and will include protocols in the Methods Document as they are developed.

35. Comment: Another example of terms to be clearly defined is the use of "sample" and "sampling." These terms seem to be used for different purposes. (1)

36. Comment: The Department should make a distinction between a sampling event that collects multiple samples, and sample replication of an individual sample within an event. (1)

Response to comments 34 and 35: A sample is the data or information collected while sampling refers to the collecting of the data. The Department has added a definition for the word "sample" in Section 3.0 which addresses multiple samples collected at one time and/or one location.

37. Comment: Table 4.1 states that at least 8 samples should be collected for a waterbody to be considered for the Integrated List. Yet, Table 4.2 details that a waterbody would be listed as "Non-attainment" if "More than 10% of samples exceed applicable SWQS and at least two (2) samples exceed applicable SWQS." Table 4.2 therefore, at least 20 samples would have to be collected within a waterbody to even be eligible for a non-attainment status, which is inconsistent with the minimum of 8 samples required in Table 4.1. These inconsistencies between text and tables are found elsewhere in the proposed methods, compromise assessments, and must be corrected so that the methods are understandable. This particular flaw has undermined the commenter's ability to assess the document. (1)

Response to comment: The Department would prefer a minimum of twenty samples to make an assessment. However, the Department frequently has limited data sets to work with. In order to utilize data sets of less than 10 samples where any one violation of the SWQS would be greater than 10%, the Department requires a minimum of two violations to confirm the impairment when there are less than 10 data points.

38. Comment: The Department should provide examples as to how a waterbody would be classified using the proposed methods, and compile a list of definitions for technical terms in the method tables. (1)

Response to Comment: The Department believes that the Methods Document uses terminology that should be familiar to the general public. However, the Department is willing to amend the Methods Document during the next revision cycle and include definitions for specific terms upon request.

39. Comment: Page 12, Threatened Waters are defined as waters that currently meet applicable water quality criteria but adverse water quality trends indicate that water quality will not be met in two years. The Department references a USEPA (2001) memorandum to support that definition. The commenter reviewed the memorandum and could not find an explanation on how an "adverse water quality trend" is determined. Is the trend determined statistically? What level of significance is employed and what level of variation is deemed acceptable? The Department in its Response to Comments document prepared for the Final 2002 Integrated Report, indicated in its response to comment 35, that trends are determined using the nonparametric Seasonal Kendals test. The Department further indicated that these results were peer reviewed and subsequently published as "Trends in water Quality of New Jersey Streams, Water years 1986-95, Water Resources Report 98-4204. The Department should amend the working of this definition to include wording referencing the source of data to be used when conducting the 2004

assessment of water quality trends. In listing these waterbodies, the Department should segregate them from other waterbodies under each waterbody/parameter so that the reader can easily distinguish them**.** (2)

Response to Comment: The USEPA memorandum supports the definition only. The "Trends in Water Quality of New Jersey Streams, Water years 1986-95, Water Resources Report 98-4204" was specific to the 2002 Integrated Report. The Department has not conducted a new trend assessment for the 2004 Integrated Report. If the Department has data to perform trend analyses in future Integrated Reports, the data and the statistical methods used to assess the data will be identified and explained in the respective Integrated Report. At present, there are no threatened waters on Sublist 5. However, the Department will clearly identify threatened waters from impaired waters on Sublist 5when the sublist contains both.

40. Comment: Page 12, Weight of Evidence. The Department's methodology must more clearly explain the manner in which the Department weighs evidence and considers these weights in terms of an assessment. (4)

Response to Comment: The Methods Document (page 12 Weight of Evidence) outlines the situations where the Department may weigh data from different sources. If the Department has the occasion to assess different weights to data, the specific rationale used will be detailed in the Integrated Report.

41. Comment: Page 12, Minimum Sample Size for Conventional Water Quality Parameters. The newest draft methodology reduced the minimum sample size (before requiring a modified water quality assessment) from 10 samples to 8 samples. This revision more accurately reflects quarterly sampling and the ability of the Department to make an assessment based on two years of data. However, the Department conventional water quality criteria, such as dissolved oxygen and phosphorus, are written as a "not to exceed" criteria. Employing the "10% rule" may be an acceptable methodology for reviewing conventional water quality data and making assessment determinations. Nevertheless, if the Department determines that less than optimal sample sizes, specifically for "not to exceed" standards, fails to provide enough information to make an assessment, the Department must clearly articulate why the information is not representative of the water quality even in lieu of a "not to exceed" criteria. (4)

Response to Comment: The Department has outlined in the Methods Document the minimum data requirements necessary to assess a waterbody. If, in accordance with the Method Document, it is determined that data do not meet the minimum data requirements and a case by case review of the data determines that it does not meet the modified assessment requirements, the data will be assessed as "insufficient data." If the Department determines that a data set that does not meet the minimum data requirements but warrants use in identifying an impaired waterbody, the Department will clearly articulate why this particular data set is representative of the waterbody and should be used for placement on Sublist 5. Although the Department agrees that any one sample which exceeds a SWQS does in fact exceed a "not to exceed" standard, the Department believes a single sample is insufficient to label that waterbody as impaired. For parameters with numeric criteria, the Department requires a minimum of two samples exceeding the SWQS to insure that the data truly represent the waterbody and not a transient condition or sampling or laboratory error.

42. Comment: Page 13, Paragraph entitled "Nutrients", The last sentence in this paragraph is incomplete. (2)

Response to Comment: The Department agrees with the comment and has completed the sentence to read "In addition to the numerical water quality criteria for total phosphorus, the SWQSs include narrative nutrient policies at N.J.A.C. 7:9B-1.5(g) that apply to all freshwaters of the state (See Section 5.0)."

43. Comment: Page 13. "Additional data" seems to be a typographical error. Is this a typographical error, or will additional data be added to this section in a future draft? (4)

Response to Comment: The Department can not find any reference to "additional Data" on page 13.

44. Comment: Section 4.2 on "Pathogen Water Quality Assessment" does not clearly state the pathogens for which SWQS exist. New Jersey SWQS include standards for fecal coliform and enterococci. The Department must explicitly consider all pathogen indicator data in comparison to existing SWQS. (1)

Response to Comment: The SWQS include criteria for both fecal coliform and enterococci. The Department has historically assessed waters using fecal coliform. Effluent limitations for NJPDES facilities have been based on fecal coliform. The waterbodies with approved fecal coliform TMDLs are listed on Sublist 4A. Although the Department has listed and is developing TMDLs based upon fecal coliform, the Department plans to evaluate compliance with both criteria once the actions required by the TMDLs are implemented. The waterbody will not be considered as attaining until compliance with both criteria is verified.

The Department is currently taking the steps to comply with the CWA amendments (known as the Beach Act) which require states to use enterrococci to assess marine recreational waters by April 2004. The Department of Health and Human Services is proposing to readopt N.J.A.C. 8:26 with amendments to reflect recent USEPA requirements for bacteriological examination of bathing waters. Therefore, the Department will use the standard for enterrococci found at N.J.A.C. 8:26-7.18 to determine whether to close a bathing beach and whether the recreational uses are impaired in the 2006 Integrated List.

45. Comment: Fecal Coliform. Page 14 of the methodology should be revised to describe enterococci as the pathogen indicator for impairment to marine beaches and E. coli as the pathogen indicator for impairment to freshwater beaches. In addition, the methodology needs to elaborate on "necessary steps" and needs to discuss the method for relating enterococci and e. coli data to fecal coliform information that the State has collected, especially for waters that are scheduled for TMDL development. In addition, e coli should be written as E. coli at the bottom of page 14. (4)

Response to Comment: Data submitted for the assessment of recreational beaches for this Integrated List consisted of fecal coliform data. The New Jersey Department of Health and Human Services is in the process of revising its regulations to change fecal coliform to enterococcus as an indicator for beaches (marine and freshwater). These regulations will be in place in time to meet the Federal mandate of April 1, 2004. The Methods Document, which will accompany the 2006 Integrated List, will reflect the change in regulation. The Department does not have adopted criteria for E. coli and therefore can not identify E. coli as the indicator for freshwater beaches at this time. The Department will determine prior to the 2006 List whether to use enterrococci or E. coli as the pathogenic indicator in fresh water. The next steps include the revisions to N.J.A.C. 8:26 as stated on page 14 of the Methods Document. The Department has collected fecal coliform at all stations and other indicators at a limited number of sites. The Department will be assessing all data to determine whether or not a relationship exists between indicators. The Department will identify the methods used to determine whether or not a relationship exists in the proposed 2006 Methods Document. This Methods Document will be public noticed for comment prior to using it for the 2006 Intergrated List. The Department has changed e coli to E. coli as suggested.

46. Comment: Table 4.4 on page 16, Pathogen Assessment Method, needs to clarify the pathogen indicator being used in the assessment. The assessment methodology currently employed may be admissible for fecal coliform; however, this assessment methodology is unacceptable for interpreting the enterococcus criteria. (4)

Response to Comment: The SWQS for fecal coliform are written as a "not to exceed the SWQS in more than 10% of the samples" and/or a geomean. In addition to a geomean, similar to many of the conventional parameters, the SWQS for the enterococcus also contain a "not to exceed" criterion. The Department recognizes that one exceedence is a violation of the SWQS. However, as done for other "not to exceed" parameters, the Department believes that using the 10% Rule for listing a waterbody as impaired is appropriate and is using the 10% Rule for enterococcus.

47. Comment: "Non-attainment" for beach bathing quality is determined based on a 10% criterion. Waterbodies with "Greater than 10% of 100 beach days" closed per year would be designated a non-attainment area. In other words, waterbodies with 10 closed beach days would be listed as impaired. This criterion is unacceptably high and must be lower, especially if an area has chronic closures (but less than 10 beach days) over multiple years. The Department should use a more protective criterion such as "10 closed beach days in any given summer season or 2 or more closed beach days per summer season for more than one year". (1)

Response to Comment: In response to the concerns raised by the commenter, the Department has re-evaluated the proposed methodology for bathing beach closure data. Using "Guidelines for the Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates" (USEPA, September 1997), the Department has revised the methodology for bathing beach closure data as follows: Based on the most recent 5 years of data, "One beach closure per year of 7 or more consecutive days; or, an average of 2 or more beach closures per year."

48. Comment: Table 4.2 (p. 14) Conventional Water Quality Assessment Method: Pinelands Commission scientists have found that in the Pinelands, median pH values are good predictors of both biological conditions and levels of watershed disturbance. Biological conditions and communities begin to shift when the median pH exceeds 5.5. We suggest that the Department rely on median pH values to assess Pinelands water quality. (3)

Response to Comment: The Department recognizes the extensive database and experience the Pinelands Commission has regarding water quality within the Pinelands region of the State. In supporting regulatory actions such as those required by Clean Water Act section 303(d), the Department is obliged to utilize and enforce the States promulgated Surface Water Quality Standards. The pH criterion in this case is worded as a "not to exceed" value rather than a measure of central tendency (mean, median, etc.).

49. Comment: Page 15, Table 4.3, under the Column "Data Requirements" the Department only addresses Streams. The Department should provide information on how it intends to address other waterbodies, such as lakes, estuaries, bays, and oceans. The statements on the frequency of sample collection in this table are confusing. The Department's intent is unclear, if the geometric mean requires five samples collected within 30 days, why would the Department allow samples to be collected quarterly? (2)

Response to Comment: The data requirement refers to all types of water bodies. Therefore, the word "streams" has been removed. Data used to determine compliance with the geometric mean requires five samples collected within 30 days. However, samples may be collected quarterly for a minimum of 2 years to determine compliance with the "not to exceed" criterion.

50. Comment: Page 16, Minimum Sample Size for Toxic Parameters. The Department has removed the minimum sample size for toxic parameters. Please explain how and if this will affect the interpretation of a water quality assessment based on allowable one exceedance in 3 years methodology. Would a waterbody be listed as impaired based on a data set with only two samples that both exceed? (4)

Response to Comment: The minimum sample size for toxic parameters has not been removed (see Table 4.5). The minimum sample size is 8 samples. The Department will consider data sets less than the minimum requirements identified for the individual assessments on a case-by-case basis if the data characterize the range of water quality variation that adequately represent conditions of existing water quality. It is highly improbable that a data set of 2 samples would be used for listing purposes unless there was additional information to support the listing.

Section 5

51. Comment: Page 19, Section 5.0, "Narrative Criteria and Policies" should include the narrative technical policy regarding natural water quality as mentioned on page 12 of the document and pursuant to N.J.A.C. 7:9B-1.5(c)1. (4)

Response to Comment: The Department has added the narrative technical policy regarding natural water quality to Section 5 for clarification.

52. Comment: Page 19, Paragraph 1, The Department should remove the reference to "translators" since it is a term that can be interpreted in many ways. For instance for many in the scientific community the term "translator" refers to a mathematical formula that is used to translate total metals values to dissolved metals values. (2)

Response to Comment: The Department realizes that some terminology may have several uses. However, the term "translator" is used by USEPA in its Consolidated Assessment and Listing Methodology (July 2002) in its discussion of narrative criteria - "states …should develop implementation procedures, often referred to as translators, that explain how different types of chemical data are used to make attainment/impairment decisions based on narrative criteria. The Department believes that the term is appropriately used in this context.

53. Comment: Page 20, Paragraph under Nutrient Criteria entitled "Streams", this paragraph is not complete. The commenter suggests the following, to be added to complete the paragraph - "and otherwise render the waters unsuitable for meeting its designated uses." (2)

Response to Comment: The Department has made the correction as the commenter suggested.

54. Comment: Page 21, Paragraph 2. The last sentence should be amended to add the words "under the heading Delisting Protocol for Phosphorus." (2)

Response to Comment: The Department agrees with the comment and has made the change as noted.

Section 6

55. Comment: Page 22, Section 6.1 Aquatic Life Designated Use Assessment, the Department in this section and in Table 6.1 on the following page, references "experienced or qualified fisheries biologists". The Department should provide additional information to define the qualifications of these experts. (2)

Response to Comment: The Department agrees with the comment and has added "experienced" fishery biologist is one who possesses, at the minimum, the following qualifications: A Bachelor's degree in one of the Biological Sciences or Natural Resource Management with a major concentration in Fisheries Science and/or Wildlife Science and one year of professional experience in fisheries biology and/or development of fisheries management programs. A Master's degree in fisheries management or a related field can be substituted for one year of experience in fish taxonomic identification and field collections" to Table 6.1as a footnote.

56. Comment: Page 22, Section 6.1,The Department states that the aquatic life designated use is based on evaluation of existing and readily available biological community data. The Department should explicitly reference the metrics employed to determine stream impairment to make it easier for third party use of this methodology and provide additional assessment data for the Department's use. (2)

Response: The Department is adding the relevant formulae to the referenced biometrics on the website at http://www.state.nj.us/dep/wmm/bfbm/rbpiinfo.html.

57. Comment: Page 24, Dissolved Oxygen. In the June 2003 version of the Integrated Report methodology, the Department has added information concerning a summer sampling frequency and specific assessment protocols for river, ocean, and estuarine stations. These additions help clarify the assessment methodology for dissolved oxygen. (4)

Response to Comment: The Department acknowledges the support as expressed by this comment.

58. Comment: Page 27, Aquatic Life Designated Use Assessment in Rivers. The Department does not explain how the data from a specific site is compared to reference location data. How many seasons/years of data are needed to make a valid assessment? The rationale and methodology for using this type of data to determine impairment needs to be clearly explained. As the Department explains on page 29, non-attainment for the benthic macroinvertebrate data could be due to extended drought conditions. Flooding can cause scour, which can greatly alter the benthic macroinvertebrate community. While the commenter agrees with the Department's position that excessive urban development contributes to flooding impacts (the Department Response to Comments document prepared for the Final 2002 Integrated Report, response to comment 66), the commenter suggests that the Department clearly differentiate between impairments caused by pollution and those caused by pollutants that will require a TMDL. (2)

Response to Comment: The Department has made clarification to both the Methods Document and to the Department's relevant website to improve the transparency of its assessment methods as suggested by the commenter. Edits to the Methods Document clarify the seasonal periods of assessment (April through November, inclusive) and the number of samples used in an assessment (one filtered as per USEPA's Rapid Bioassessment Protocols). The Department's bioassessment website has been expanded to include the formulae employed to generate the individual biometrics used to generate the New Jersey Impairment Score (NJIS). In addition, the Department will soon post a description of how USEPA, Region II calibrated the biometric scoring system specifically to New Jersey streams. This methodology forms the basis for the scoring system New Jersey uses as reference sites are not used in the New Jersey system.

The Department is required to list waters identified as being biologically impaired even if the precise cause of impairment is not known at the time of listing (pollution vs. pollutant). Waterbodies listed as biologically impaired will remain on Sublist 5 until a determination of the cause of impairment is determined. At this time, the Department has not determined the cause of biological impairment for waterbodies listed on Sublist 5. If the problem is due to a pollutant, the Department will develop a TMDL. If the cause is not a pollutant, the Department can list the impaired waterbody on Sublist 4B or 4C.

59. Comment: Aquatic Life Designated Use Assessment in Rivers (p. 27). The New Jersey Impairment Score (NJIS) and Rapid Bioassessment Protocol (RBP) should not be applied to the New Jersey Pinelands Area because of the unique nature of the low pH-adapted organisms within these waters (i.e., PL-designated waters as per N.J.A.C. 7:9B. An alternative assessment method should be developed for Pinelands waters. The Pinelands Commission is currently working with Department staff to develop such an alternative method. (3)

Response To Comment: The Department agrees with the comment that the Department's current benthic macroinvertebrate metrics should not be applied to the New Jersey Pinelands Area. As indicated in the comment, the Department has been working with Pinelands Commission staff to develop an alternative method. As indicated in Response to Comment 61, a modified method has been used by the Department to assess selected Pinelands sites and place them in the appropriate sublists in the 2004 List. The Department continues to work with the Pinelands Commission to improve the application of bioassessment methods.

60. Comment: Page 28, Table 6.5a, The terms "non-impaired", "severely impaired" and "moderately impaired" as related to benthic monitoring are defined in the protocols the Department uses to conduct biological assessments. The Department should footnote the use of these terms and use the following words for that footnote, "The Department uses the Rapid Bioassessment Protocol developed by USEPA. A non-impaired community is defined as a community comparable to other undisturbed streams within the region, with maximum taxa richness, balanced taxa groups, and a good representation of intolerant individuals. To be classified as Non-impaired, the site must receive a Rapid Bioassessment Protocol score of between 24 and 30. Severely impaired sites are represented by fewer taxa that are very abundant. Only tolerant taxa are present. Sites with scores less than 6 are classified as Severely Impaired. Sites with scores between 9 and 21 are considered Moderately Impaired with reduced macroinvertebrate richness. Taxa composition changes result in reduced community balance and loss of intolerant taxa." (2)

Response to Comment: The recommended additions to the methods document have been made.

61. Comment: Table 6.5b Aquatic Life Designated Use Assessment Method for Pinelands Streams (p. 28-29). We support the use of the Commission's biological database to assess waterbodies in Pinelands watersheds (reports on the Rancocas Creek and Mullica River basins have been completed and studies of the Great Egg Harbor River and Toms River basins are in progress). However, we recommend that stream sites and stream impoundments be classified separately. Stream sites should be classified using vegetation and fish rankings. Stream impoundments should be classified using anuran (frog and toad) and fish rankings (refer to comments below on Section 6.3, Lake Trophic Status Assessment Method). A stream site should be placed in the Full Attainment category if both indicators are in the first quintile, if one indicator is in the first quintile and the other in the second quintile, or only one indicator is available and it is in the first quintile. A stream site should be placed in the Non Attainment category if both indicators are in the fifth quintile, one indicator is in the fifth quintile and the other in the fourth quintile, or only one indicator is available and it is in the fifth quintile. Water quality information should be used to verify stream site classifications derived from a single indicator. For clarity, we recommend that the Insufficient Data category be changed to Not Classified since lack of data is not the reason why some sites do not fall in either the Full Attainment or Non Attainment categories. We could not order the sites if there was insufficient data. We also suggest that water-quality measurements such as pH and specific conductance play a role in the assessment of Pinelands streams. We strongly recommend that a caveat be included in each assessment status description in Table 6.5b that states, A...unless water quality data indicate that different conditions exist. (3)

Response to Comment: Regarding the use of the suggested biological assessment protocols, the Department agrees and has followed the method outlined by the commenter. Clarifications have been made to the Methods Document to better delineate the assessment protocol using Pinelands data.

Regarding the use of a water quality indicators such as pH and conductance to supplement assessments when only one biological indicator is available or to supplement biological assessments in general, the Department prefers to use biological indicators alone whenever possible to assess the status of aquatic life. This effort is designed to characterize the biological condition of the waterbody, regardless of water

chemistry. Because of the complex interaction between biota and stream or lake chemistry, the Department believes that direct biotic condition indicators are more accurate in assessing the attainment of this specific use than are physical/ chemical data, even if relying on a single biological indicator.

Regarding the recommendation to change the nomenclature of the "Insufficient Data" category to "Not Classified," the Department agrees that in some cases the nomenclature for this category may not perfectly fit all situations wherein this category is used. However, the Department prefers to remain consistent with the existing USEPA nomenclature to avoid confusion. In essence, this category envelops all scenarios whereby there is insufficient information for the Department to make a confident assessment of the attainment status of a particular designated use.

62. Comment: Lake Trophic Status Assessment Method (p. 32). The methodology indicates that lake trophic assessments were conducted using the USEPA's Clean Lakes Program Guidance Manual (USEPA, 1980). Table 6.9, Lake Remediation Target Levels for Selected Parameters as per the USEPA's Clean Lakes Program Guidance Manual, illustrates the application of selected water quality parameters to the determination of a lake's eutrophic status. The methodology states that if one or more of the following parameters exist, a lake will be considered eutrophic:

1. Total phosphorous greater than or equal to 0.02 ppm TP (winter mean)
2. Chlorophyll *a* greater than 5-10 ppb Chl*a* (summer)
3. Transparency less than 1.5 meters (summer)
4. Excessive macrophyte populations or sedimentation impairing use

We believe that the third and fourth items, transparency and excessive macrophyte populations, should not be used alone for assessment of Pinelands lakes. Dense aquatic macrophyte beds are not unusual in shallow Pinelands waterbodies and do not indicate eutrophication in the absence of data showing elevated nutrients. Regarding secchi disk transparency, in stained Pinelands waters secchi depth is probably an indicator of tea-colored water due to dissolved organic carbon rather than phytoplankton abundance.
This section also states that use support determinations are solely based upon an assumption of recreational use impairment and not on trophic status alone. Eutrophic lakes are not assumed to be use impaired. Rather, it is eutrophic lakes with actual or assumed use impairments that are assessed as use impaired. As described above, a Pinelands lake may well have recreational use impairments, such as low transparency or excessive macrophytes, due to natural and unimpaired Pinelands conditions. Because of the unique nature of Pinelands conditions, we recommend that the Department rely on the Pinelands Commission's assessment of Pinelands lakes to determine if these lakes are impaired or eutrophic. (3)

Response to Comment: As stated by the Methods Document and reflected in the comment, for the purpose of 303(d) listing (Sublist 5), the Department's assessment is based upon the lake's use support and is not based on the eutrophic status of lake. Lakes with impaired uses brought about by anthropologically accelerated eutrophication are a concern, hence lakes are first screened for use support status by reviewing their eutrophic status. Having said that, the Department agrees that some Pinelands lakes have been inappropriately listed on Sublist 5 and has worked to clarify the use support status of these lakes and is reclassifying such lakes as information becomes available to support this effort. The Department will work with the Pinelands Commission to insure that all such lakes are placed on the appropriate sublist in the 2006 Integrated List.

63. Comment: Page 33, Data Requirements Specific to Fish Consumption Designated Use, The Department should consider referencing the more recent USEPA guidance (November 2000; USEPA 823-B-00-007). The criteria used to develop fish consumption advisories often are established by agencies other than the Department with inconsistent application of risk values. The Department should bring consistency to this process by pursuing, through formal rule making, the establishment of fish tissue criteria based upon a clearly defined set of risk formulas. (2)

Response to Comment: The Department has employed a multi-agency and peer review approach to developing risk values and resulting consumption advisories such as was done for mercury. Advisories for PCBs issued in January 2003 were based upon the USEPA guidance document referenced in the comment (the methods document has been corrected to reflect this). The Department sets consumption advisories through what it believes are clearly defined risk assessments, although such assessments are different for different contaminants as the risks they pose differ (i.e. cancer vs. non-cancer). For example, for PCBs the Department uses a 10^{-4} (1 in 10,000) and 10^{-5} (1 in 100,000) lifetime cancer risk. The mercury advisory is based upon neurological development (i.e., non-cancer risk). Currently New Jersey uses advisories for dioxin based upon recommendations by the FDA, however, the Department is reviewing the risk basis for this contaminant. Otherwise, the Department is not sure what inconsistencies the commenter is referring to other than perhaps differences between states. In such cases rule making in New Jersey would have no influence upon out of state criteria.

Section 7

64. Comment: Page 40, Section 7.1.1,The Department should add the following statement between the sixth and seventh paragraphs, "Criteria for determining spatial extent varies when applied to 4th order or larger streams. What follows are descriptions of how each indicator station type will be addressed for 4th order or larger streams. There are no Background Stations located on 4th order or larger streams so these are not discussed." (2)

Response to Comment: : The Department has inserted the following note: "NOTE: Criteria for determining spatial extent varies for each station type when applied to 4th order and larger streams. The following describes the spatial extent method for each type of station. Background Stations are not located on 4th order or larger rivers and therefore not discussed."

65. Comment: Page 40, Section 7.1.1, Paragraph 1, The Department should explain the purpose of each of the types of monitoring stations. (2)

Response to Comment: Appendix IV provides a description of each type of monitoring station including their purpose.

66. Comment: Page 41 Section 7.1.1 cont'd, The Department should revise the wording of the descriptions for the Watershed Integrator Station and the Statewide Status Station/Mixed Land Use Spatial extent descriptions. The new wording should read, "Upstream of the monitoring site the mainstem is classified as monitored until there is a confluence with a tributary that is one stream order smaller or equal to the mainstem." An upstream tributary cannot be larger. In addition, these two descriptions appear to be very similar. The Department should define what characteristics are different.
The Department should revise all descriptions discussing downstream extent be revised to read, "one stream order smaller, equal to or larger than the mainstem." The Department should replace the phrase, "2nd order stream or larger stream" with the phrase, "2nd order or larger stream". The original phrase can be interpreted to exclude a stream of equal size and the commenter does not think this was the Department's intent. (2)

Response to Comment: The differences between the types of stations are described in Appendix IV of the Methods Document. They are very similar, but not exactly, the same. The Department believes that the descriptions in Appendix IV are clearer than the suggested statement. The Department has revised the descriptions discussing downstream extent as follows: "…until there is a confluence with a tributary that is one stream order smaller, equal to, or larger than the mainstem….". The Department has replaced the phrase, "2nd order stream or larger stream" with the phrase, "2nd order or larger stream".

67. Comment: Page 42, Section 7.1.2. The text for "Estimated River Assessments" is confusing. The Department should clearly explain the graphical presentation provided in Figure 8. The text should be revised to include labeled reaches that will provide a more illustrative example as follows; "If two adjacent monitored reaches (AB & CD) had the same assessment result and similar land uses, then the assessment was extended to close small gaps (BC). If two or more monitored reaches (FE & GE) with the same assessment result joined at a confluence and had similar land uses, then the assessment was extended below the confluence to the next tributary (EA)." A revised copy of the figure is also provided with the corresponding labels included. (2)

Response to Comment: The Department believes the language in the Methods Document is sufficiently clear and has not made any changes.

Section 8

68. Comment: Page 49, Category 4b Waters. The actions necessary for being able to place a waterbody/pollutant combination in Category 4B should clearly state that the actions must be enforceable by federal, state or municipal law. This identification of the requirement for "enforceable" actions is stated on page 48 but is omitted in Table 8.1 on page 49 and in Section 8.3 on page 50. (4)

Response to Comment: The Department has added the word "enforceable" as suggested.

69. Comment: Page 49, Section 8.1. The Document states on page 50 that for "… the vast majority of impaired waters listed in the Integrated Report, the causes and sources indicated are the best estimations of staff." This approach appears to be very arbitrary and ill defined. If the causes and sources of impairment are not able to be determined, it appears impossible to realistically design and implement a TMDL. The Department states that impairment not caused by a pollutant is a reason for delisting in Section 8.3, item 5 (page 51). (2)

Response to Comment: When the source of the impairment is unknown (pollutant versus pollution), USEPA guidance recommends the segment be placed in Sublist 5 until additional data can determine the source of impairment. (USEPA 2003) Once a waterbody or segment is designated for TMDL development, a more thorough investigative study will be conducted to determine possible causes and sources of impairment. These investigations may include more intensive ambient water quality sampling, aquatic toxicity studies, sediment analysis, or fish tissue analysis and/or dilution calculations of known discharges. If the additional information identifies the source as pollution, the waterbody will be moved to Sublist 4.

70. Comment: Page 52, Table 8.3, In Appendix II, the Department states that any one exceedence out of the four samples collected would lead to non-attainment. Therefore, the Department should correct the information in Table 8.3. (2)

Response to Comment: The Department has edited Table 8.3 to clarify that only one exceedence is necessary out of a data set consisting of at least 3 stable base flow and 1 elevated flow samples to retain a waterbody on Sublist 5.

Section 9

71. Comment: The criteria which prioritizes the ranking of waterbodies by pollutant of concern is not adequate. Table 9.1 in the methods document outlines how waterbodies, once listed as impaired on Sublist 5, will be prioritized for TMDL development. Under the proposed methods, waterbodies with impairments due to toxins, nutrients, dissolved oxygen, suspended solids, and temperature, are given higher priorities. Those waterbodies with regulatory measures to protect the public are given the lowest priority. For example, lakes impaired due to fecal coliform receive low priority ranking because they

affect bathing beaches at which there are controls in place such as beach closures to protect the public. One such lake presumably is Wreck Pond in Spring Lake, which causes frequent beach closures every summer season. Waters impaired for shellfish harvesting are also given low priority. It is important to note that controls for beach closures are during summer months only, yet people recreate at the beach and in the water year-round. Shellfish water closures are not always respected by humans and especially by wildlife. (1)

Response To Comment: The Department agrees that, in terms of the stated purpose of Table 9.1, it is more appropriate to identify listings for fecal coliform in lakes and pathogens for shellfish as a high priority because of the potential to affect human health. The fact that management measures may be in place to protect actual impacts on human health will not be used to prioritize based on the parameter of concern. This change has been made to Table 9.1.

72. Comment: Page 54, Table 9.1, Often "metals, toxics and organics" have criteria associated with aquatic life issues in addition to those for human health. The Department should include a second listing for these pollutants with a corresponding priority of "Medium" and a reason for priority of "Important aquatic life issue". (2)

Response to Comment: When a parameter has different levels of concern for different receptors, the purpose of the table is to identify the highest level of concern that should be associated with each parameter. Metals, toxics and organics have already been identified as ranking "high" based on the potential to affect human health. Therefore, the suggestion to include a second category with a medium priority for metals, toxics and organics because of the potential effect on aquatic life would not serve to change the overall priority of the noted parameters. The high priority for TMDL development for human health would override the medium priority for aquatic life.

73. Comment: Page 54, last paragraph - Priority Ranking Category 5 Waters for TMDL development. The first sentence of the last paragraph on page 54 reads, "There is a difference, however, between ranking for priority and implementing a TMDL development schedule." The sentence suggests that there are two priority ranking schemes. This is not the case in terms of the requirements for the Section 303(d) list. The ranking which the federal regulations require as part of the Section 303(d) list is, in fact, a priority ranking for TMDL development. This priority ranking for TMDL development should consider all the factors used by the state in determining when a TMDL will be developed. This combination of factors is clearly identified in the methodology and a possible replacement for the aforementioned sentence might be, "Ranking for priority must take into account a multiplicity of factors in addition to the nature of the pollutant." the Department must modify its priority ranking of waters to be consistent with the intent of the 303(d) regulations. The Department must prioritize waters based on its intent to establish TMDLs over the next two-year period. (4)

Response to Comment: The Department agrees that the prioritization of segments should be based on multiple factors and reflect the Department's intended schedule for preparing TMDLs. Federal requirements at 40 CFR 130.7 state that the prioritization process must take into account the "severity of the pollution and the uses to be made of such waters and shall specifically include the identification of waters targeted for TMDL development in the next two years". Language changes have been made to reflect that the Department's priorities for listed segments and TMDL development are the same and take into account the above factors as well as the other factors already noted in Section 9.

Section 10

74. Comment: Page 56, Section 10, The Department should revise the wording in the second paragraph to read, "the 2002 Integrated Report included a comprehensive Monitoring and Assessment Plan that described the state's approach to obtaining data and information necessary to characterize the attainment

status of all assessment units. Elements of this strategy included; a description of the sampling approach (i.e. rotating basin, fixed and probabilistic station array), a list of the parameters to be collected (i.e. physical, chemical and biological), an approach to assess the data with respect to SWQS and spatial extent. The 2002 Integrated Report included a schedule (both long term and annual) for collecting data, and information for basic assessments and for TMDLs. The Department has used this format as the foundation for this current version of the plan, which will support completion of the 2004 Integrated Report and intends to continue to use this format, with the appropriate updates, for future revisions." (2)

Response to Comment: The Department agrees with the intent of the comment and has changed the wording of the paragraph as follows: "Consistent with Section 106(e)(1) of the CWA, the Integrated Report will include a comprehensive Monitoring and Assessment Plan that describes the state's approach to obtaining data and information necessary to characterize the attainment status of all assessment units. Elements of this strategy include: a description of the sampling approach (i.e. rotating basin, fixed and probabilistic station array), a list of the parameters to be collected (i.e. physical, chemical, and biological), an approach to assess the data with respect to SWQS and spatial extent. The Integrated Report will include a schedule (both long term and annually) for collecting data and information for basic assessments and for TMDLs."

75. Comment: Page 57. The Department has indicated in Section 8 that it does not plan to use a Sublist 2. The Department should remove the reference to Sublist 2 from this section. (2)

Response to Comment: The Department agrees with the comment and has made the change.

Section 11

76. Comment: Page 58, Criteria for Utilization. The Department has not outlined all requisite criteria for considering data as acceptable for use in water quality assessments in it's Data Solicitation Notice or the Draft Methods Document. These documents only address the required format for submission The Department should include all the criteria the Department will use to determine if data that are submitted to the Department from outside sources are acceptable for use in water quality assessments. (4)

Response to Comment: The Department disagrees with the comment. The data solicitation details the data quality requirements. These include: Requiring a Quality Assurance Project Plan in compliance with USEPA's QAQC Guidance; Replicates; blanks and recovery spikes must be collected in accordance with the Department's Sampling Manual; Sampling locations must be accurately documented to within 200 feet; Laboratory samples must be analyzed at a State certified laboratory; and, Analytical testing methods shall be in accordance with 40 CFR Part 136 Guidelines for Establishing Test Procedures for Analysis under the Clean Water Act. The Methods Document addresses the age of the data, the sampling frequency and the number of samples.

Appendix 1

77. Comment: Appendix I: USEPA – USGS - the Department Interagency Workgroup Assessment and Listing Methodology for Aquatic Life in Freshwater Streams (p. 64). Pinelands Commission staff supports the recommendation of the Interagency Workgroup to place Pinelands assessments on Sublist 3. In consultation with Department staff and under the Mullica Watershed Planning Project contract with the Department's Division of Watershed Management, Pinelands Commission staff is developing a new, multiparameter assessment methodology and ranking system that identifies impaired streams in the Mullica Watershed (WMA 14). In the future, this methodology may also be used to assess other Pinelands and Outer Coastal Plain waterbodies. The new ranking should provide the basis for revisions to the Department's Integrated List of Waterbodies categorization for Pinelands streams. (3)

Response to Comment: The Department acknowledges the comment and has found the existing biological data supplied by the Pinelands Commission very helpful in reassessing the biological status of Pinelands waterbodies. The Methods Document will be revised as new methodologies are developed.